

FIG. 1

FIG. 2

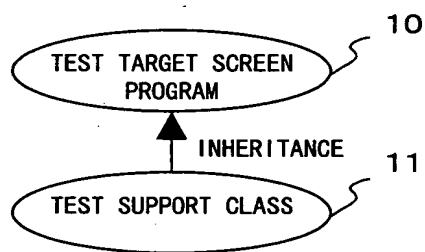


FIG. 2

100004268 091304

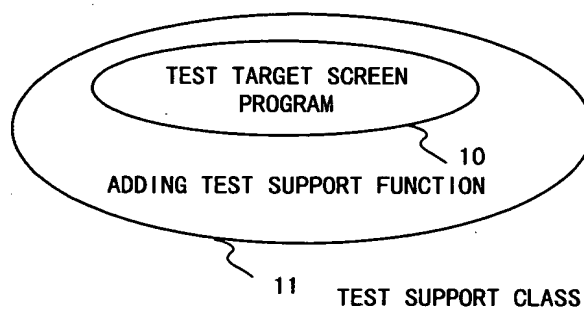


FIG. 3

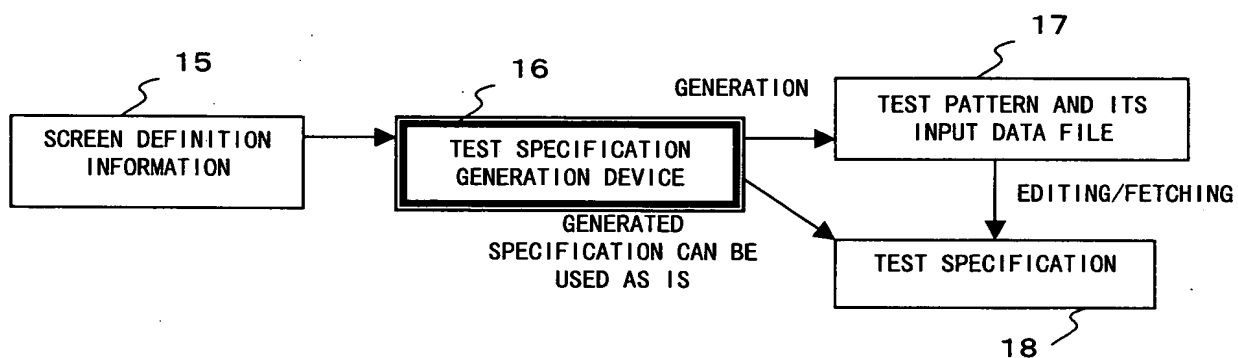


FIG. 4

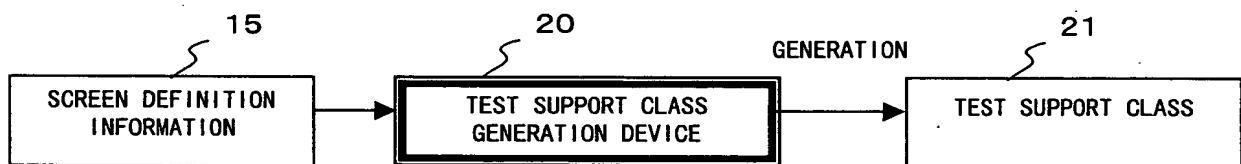
[illegible]

FIG. 5

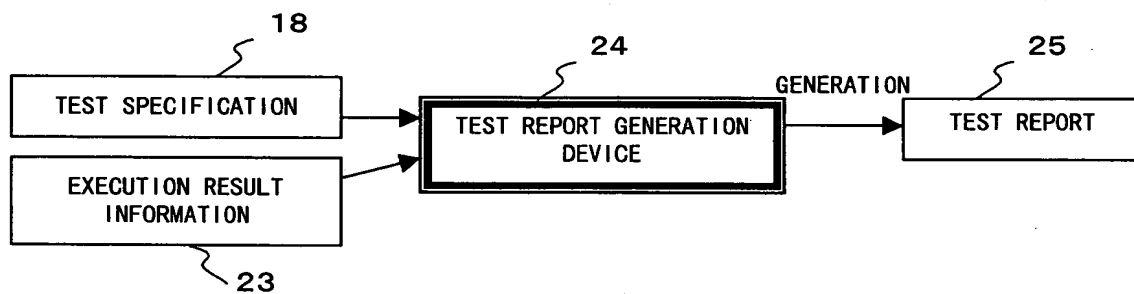


FIG. 6

00001268 031301

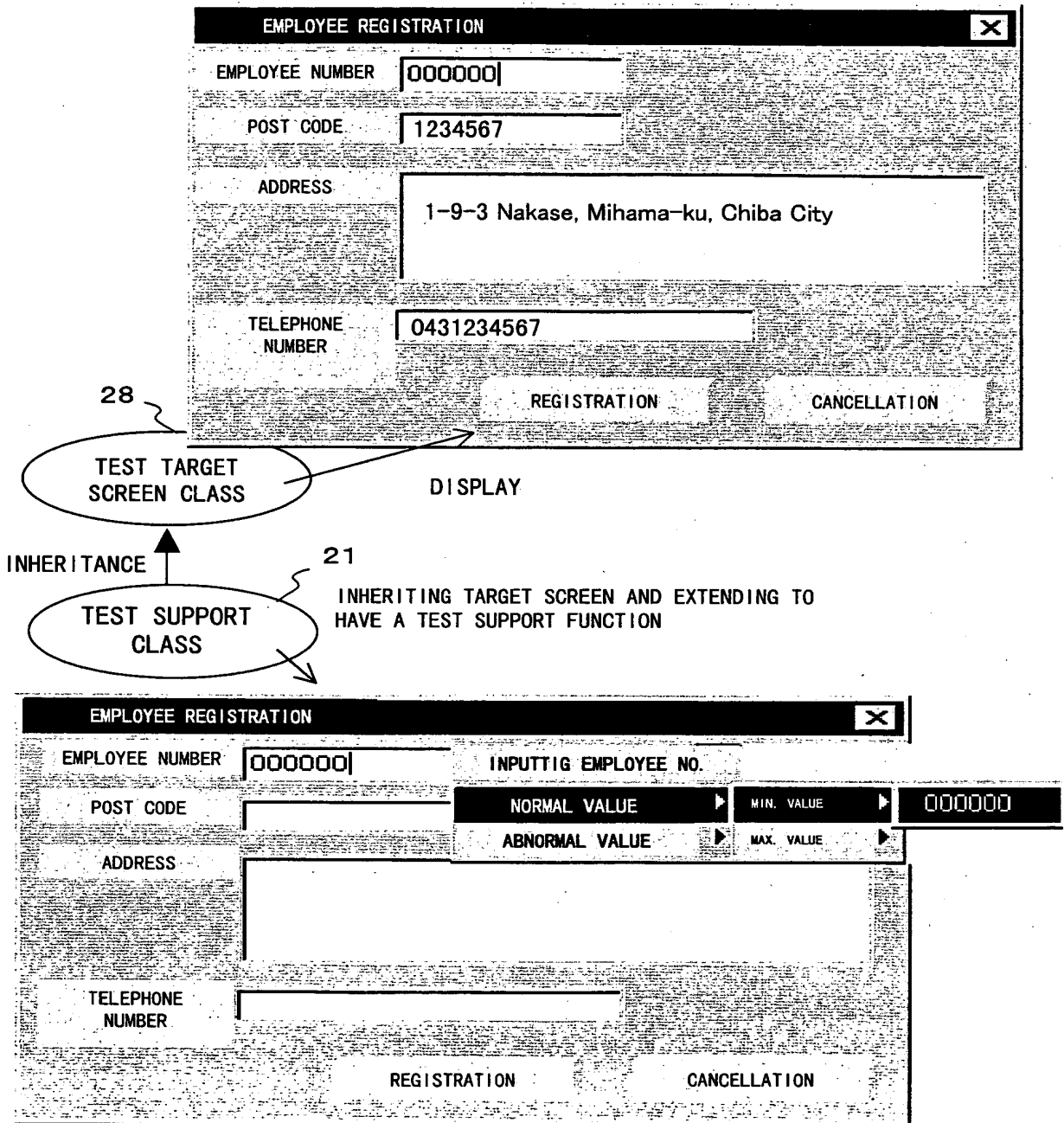


FIG. 8

TESTED" 89240800

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EMPLOYEE REGISTRATION
SCREEN DEFINITION

TEST SPECIFICATION
GENERATION DEVICE

NAME OF SCREEN : EMPLOYEE REGISTRATION jyugyoInToroku
NAME OF SAMPLE SCREEN : DB REGISTRATION TYPE / DBtorokuMaster
SCREEN SIZE : 600 x 100

NAME OF ITEM	NAME OF VARIABLE	TYPE	NUMBER OF DIGITS	MINIMUM VALUE	MAXIMUM VALUE
EMPLOYEE NUMBER	jyugyoInBangou	NUMERAL	6	000000	999999
POST CODE	yubinBangou	NUMERAL	7	0010001	9999999
ADDRESS	jyusyo	JAPANESE/ ALPHANU- MERIC	80		
TELEPHONE NUMBER	denwaBangou	NUMERAL	10		
REGISTRATION	torokuButton	BUTTON			
CANCELLATION	cancelButton	BUTTON			

EMPLOYEE REGISTRATION SCREEN TEST SPECIFICATION (IN AN ITEM UNIT)

NAME OF TEST CASE	TEST ITEM	CONTENTS OF TEST	TEST DATA	EXECUTION RESULT	EXECUTION DATE
TEST-1001-01	EMPLOYEE NUMBER	MINIMUM VALUE	000000		
TEST-1001-02		MAXIMUM VALUE	999999		
TEST-1001-03		MINIMUM VALUE-1	-1		
TEST-1001-04		MAXIMUM VALUE+1	1000000		
TEST-1001-05		INPUTTING ALPHABET	ABCDE		
TEST-1001-06		JAPANESE	あ, い, う		
TEST-1002-01	POST CODE		0010001		
TEST-1002-02			9999999		
...		

GENERATING SCREEN

EMPLOYEE REGISTRATION

EMPLOYEE
NUMBER000000

POST CODE

ADDRESS

TELEPHONE
NUMBER

REGISTRATION

CANCELLATION

EMPLOYEE REGISTRATION SCREEN TEST SPECIFICATION (IN A SCREEN UNIT)

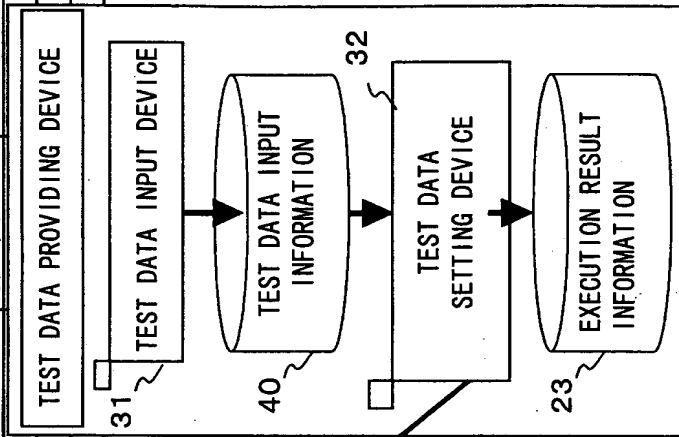
NAME OF TEST CASE	TEST ITEM	CONTENTS OF TEST	TEST DATA	EXECUTION RESULT	EXECUTION DATE
TEST-G001	EMPLOYEE NUMBER	MINIMUM VALUE	000000		
TEST-G001	POST CODE	NORMAL	1234567		
TEST-G001	ADDRESS	NORMAL	Mihama-ku, Chiba-City		
TEST-G001	TELEPHONE NUMBER	NORMAL	0431234567		
TEST-G002	EMPLOYEE NUMBER	MAXIMUM VALUE	9999999		
TEST-G002	POST CODE	NORMAL	1234567		
TEST-G002	ADDRESS	NORMAL	Mihama-ku, Chiba-City		
TEST-G002	TELEPHONE NUMBER	NORMAL	0431234567		
...		

FIG. 9

FOEFCO" 89210869

EMPLOYEE REGISTRATION SCREEN TEST SPECIFICATION (EMPLOYEE NUMBER)

NAME OF TEST CASE	TEST ITEM	CONTENTS OF TEST	TEST DATA	EXECUTION RESULT	EXECUTION DATE
TEST-1001-01	EMPLOYEE NUMBER	MINIMUM VALUE	000000		
TEST-1001-02		MAXIMUM VALUE	999999		
TEST-1001-03		MINIMUM VALUE-1	-1		
TEST-1001-04		MAXIMUM VALUE+1	1000000		
TEST-1001-05		INPUTTING ALPHABET ABCDE	ABCDE		
TEST-1001-06		JAPANESE	あ い う		
TEST-1002-01	POST CODE				
TEST-1002-02					



EMPLOYEE REGISTRATION [X]

EMPLOYEE NUMBER: 000000

POST CODE:

ADDRESS:

TELEPHONE NUMBER:

INPUTTING EMPLOYEE NO. [NORMAL VALUE] [MIN. VALUE] [MAX. VALUE] [000000]

[ABNORMAL VALUE] [MIN. VALUE] [MAX. VALUE]

REGISTRATION CANCELLATION

FIG. 10

102460" 83240860

EMPLOYEE REGISTRATION SCREEN TEST SPECIFICATION (EMPLOYEE NUMBER)

NAME OF TEST CASE	TEST ITEM	CONTENTS OF TEST	TEST DATA	EXECUTION RESULT	EXECUTION DATE
TEST-G001	EMPLOYEE NUMBER	MINIMUM VALUE	000000		
TEST-G001	POST CODE	NORMAL	1234567		
TEST-G001	ADDRESS	NORMAL	Mihama-ku, Chiba-City		
TEST-G001	TELEPHONE NUMBER	NORMAL	0431234567		
TEST-G002	EMPLOYEE NUMBER	MAXIMUM VALUE	999999		
TEST-G002	POST CODE	NORMAL	Mihama-ku, Chiba-City		
TEST-G002	ADDRESS	NORMAL	0431234567		
TEST-G002	TELEPHONE NUMBER	NORMAL			
...		

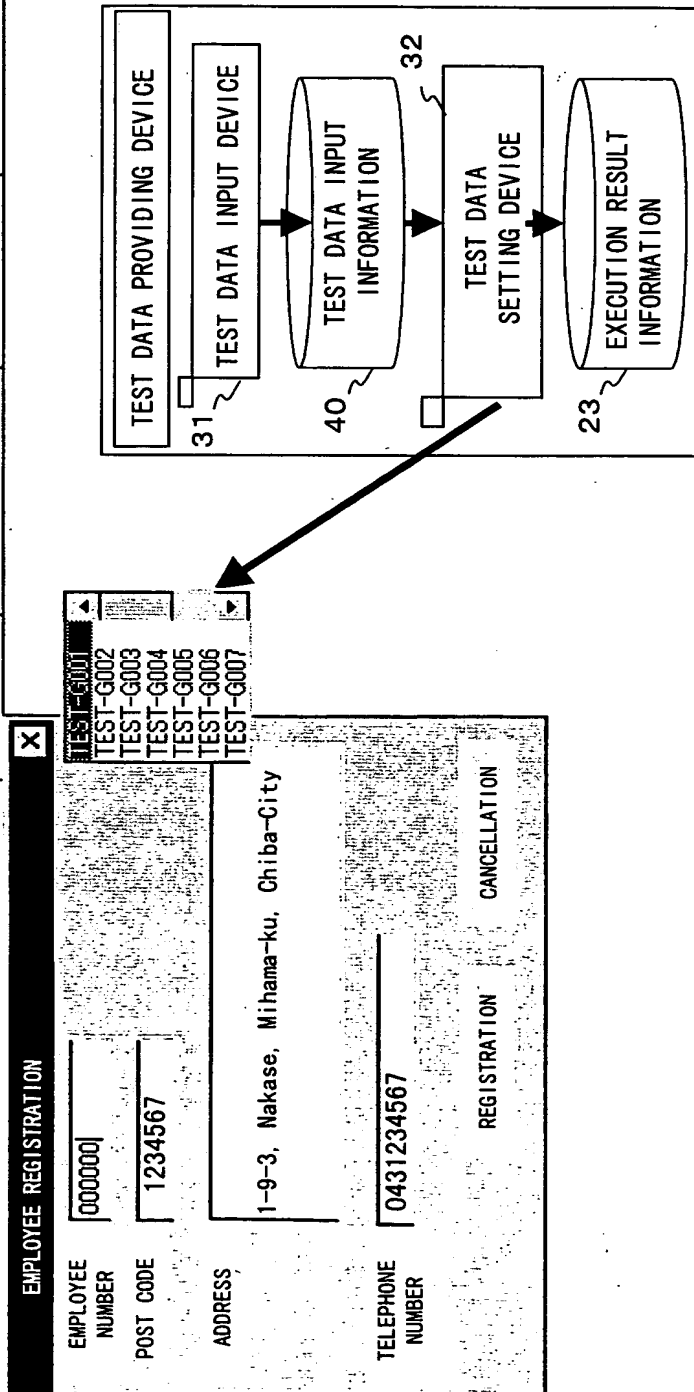


FIG. 11

EMPLOYEE REGISTRATION SCREEN TEST SPECIFICATION (EMPLOYEE NUMBER)

NAME OF TEST CASE	TEST ITEM	CONTENTS OF TEST	TEST DATA	EXECUTION RESULT	EXECUTION DATE
TEST-G001	EMPLOYEE NUMBER	MINIMUM VALUE	000000		
TEST-G001	POST CODE	NORMAL	1234567		
TEST-G001	ADDRESS	NORMAL	Mihama-ku, Chiba-City		
TEST-G001	TELEPHONE NUMBER	NORMAL	0431234567		
TEST-G002	EMPLOYEE NUMBER	MAXIMUM VALUE	999999		
TEST-G002	POST CODE	NORMAL	1234567		
TEST-G002	ADDRESS	NORMAL			
TEST-G002	TELEPHONE NUMBER				
...

EMPLOYEE REGISTRATION

EMPLOYEE NUMBER

000000

POST CODE

1234567

ADDRESS

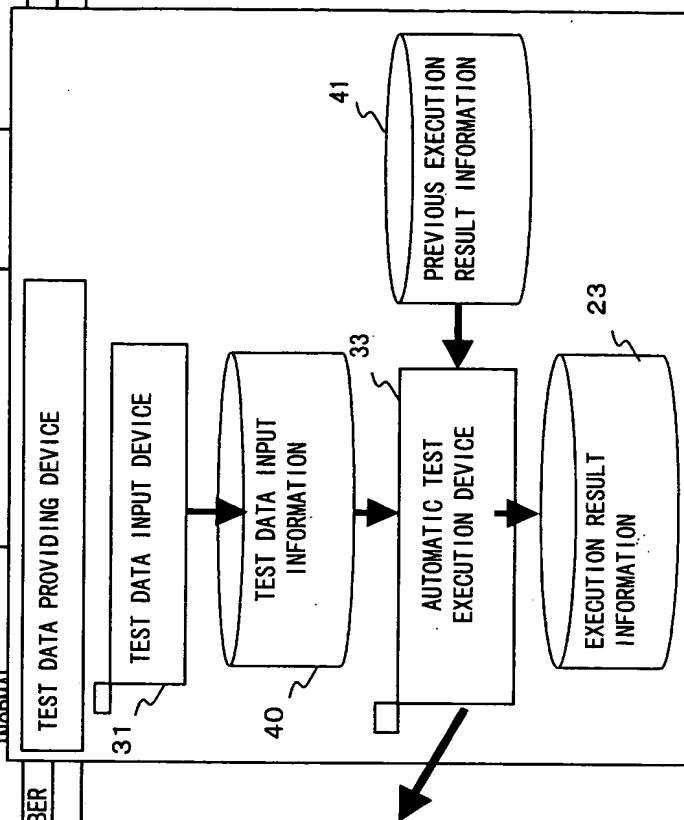
1-9-3, Nakase, Mihama-ku, Chiba-City

TELEPHONE NUMBER

0431234567

STATUS: REGISTERED

REGISTRATION



AUTOMATIC TEST EXECUTION

TEST-G001

TEST-G002

TEST-G003

TEST-G004

TEST-G005

TEST-G006

TEST-G007

SUSPENDING

RESULT OF TEST-T003 IS DIFFERENT FROM PREVIOUS RESULT. "REGISTRATION"

FIG. 12

EMPLOYEE REGISTRATION			
EMPLOYEE NUMBER	000000	POST CODE	1234567
ADDRESS			
1-9-3, Nakase, Mihama-ku, Chiba-City			
TELEPHONE NUMBER	0431234567	STATUS	REGISTERED
		REGISTRATION	CANCELLATION

INPUT FIELD

- WHEN ERROR PROCESS IS ENTERED, BACKGROUND COLOR OF INPUT FIELD TURNS YELLOW.
- WHEN NORMAL PROCESS IS ENTERED, BACKGROUND COLOR OF INPUT FIELD TURNS BLUE.

BUTTON

- WHEN IT IS ONCE PRESSED, BACKGROUND COLOR OF THE BUTTON TURNS BLUE.

FIG. 13

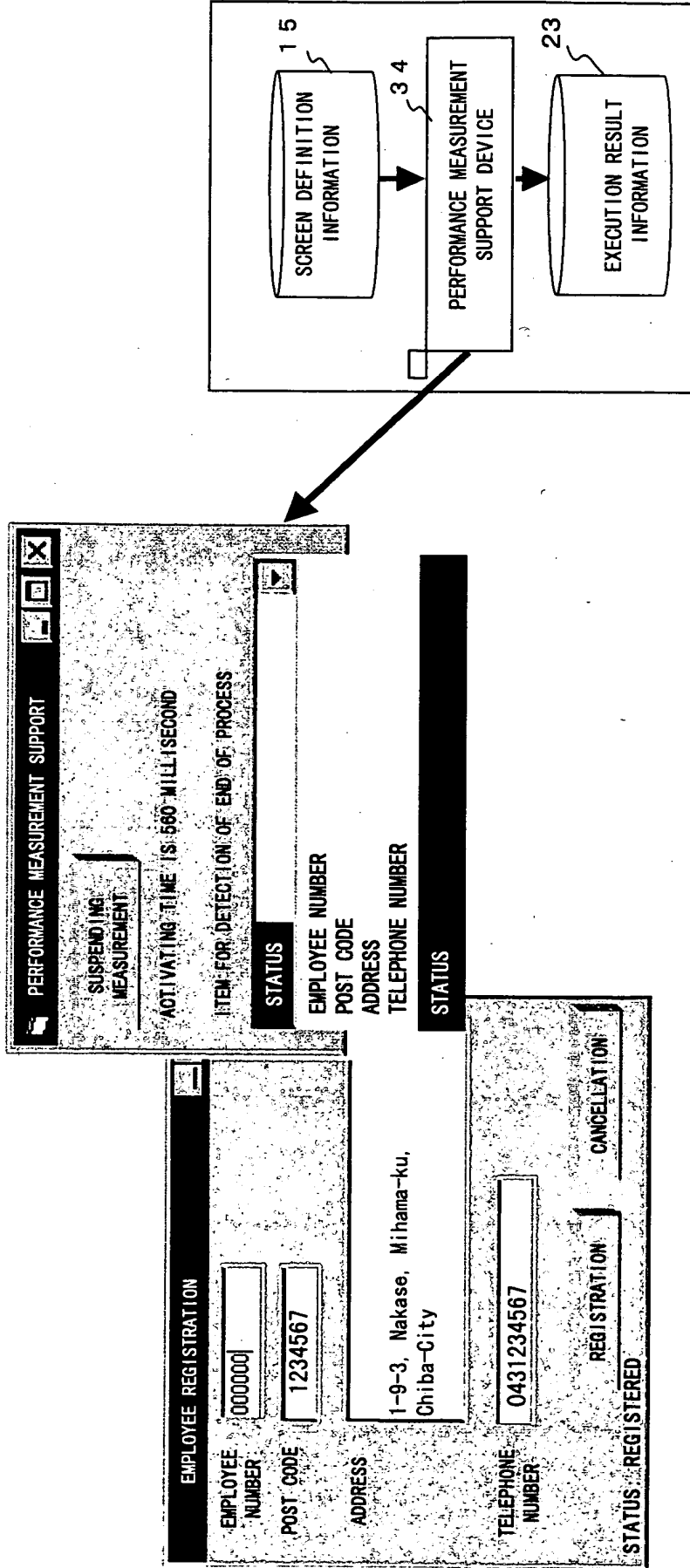


FIG. 14

102460" 33210360

EMPLOYEE REGISTRATION SCREEN TEST SPECIFICATION (EMPLOYEE NUMBER)

NAME OF TEST CASE	TEST ITEM	CONTENTS OF TEST	TEST DATA	EXECUTION RESULT	EXECUTION DATE
TEST-1001-01	EMPLOYEE NUMBER	MINIMUM VALUE	000000	O	00/03/03
TEST-1001-02		MAXIMUM VALUE	999999	O	00/03/03
TEST-1001-03		MINIMUM VALUE-1	-1	x	00/03/03
TEST-1001-04		MAXIMUM VALUE+1	100000	x	
TEST-1001-05		INPUTTING ALPHABET	ABCDE	x	
TEST-1001-06		JAPANESE	あ, い, う	x	
TEST-1001-07				O	00/03/04
TEST-1001-08				O	00/03/04

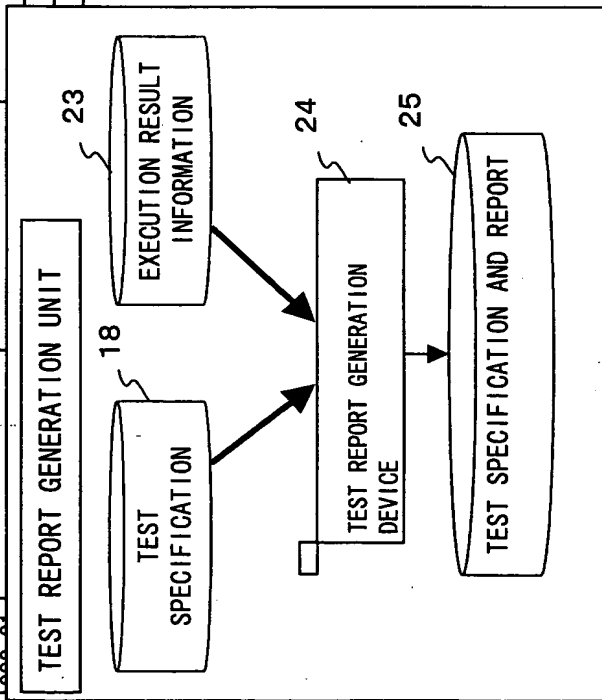


FIG. 15

FIG. 16

EMPLOYEE REGISTRATION
SCREEN DEFINITION

NAME OF SCREEN : EMPLOYEE REGISTRATION
SAMPLE NAME OF SCREEN : DB REGISTRATION TYPE / DBTbokuMaster
SCREEN SIZE : 600 x 400

NAME OF ITEM	NAME OF VARIABLE	TYPE	NUMBER OF DIGITS	MINIMUM VALUE	MAXIMUM VALUE
EMPLOYEE NUMBER	JyusyoInBangou	NUMERAL	8	000000	999999
POST CODE	JyubInBangou	NUMERAL	7	0010001	999999
ADDRESS	Jyusyo	JAPANESE/ ALPHANUMERIC	80		
TELEPHONE NUMBER	dennaBangou	NUMERAL	10		
REGISTRATION CANCELLATION	torokuButton cancelButton	BUTTON			

EMPLOYEE REGISTRATION SCREEN TEST SPECIFICATION (EMPLOYEE NUMBER)

NAME OF TEST CASE	TEST ITEM	CONTENTS OF TEST	TEST DATA	EXECUTION RESULT	EXECUTION DATE
TEST-1001-01	EMPLOYEE NUMBER	MINIMUM VALUE	000000		
TEST-1001-02		MAXIMUM VALUE	999999		
TEST-1001-03		MINIMUM VALUE-1	-1		
TEST-1001-04		MAXIMUM VALUE+1	1000000		
TEST-1001-05		INPUTTING ALPHABET	ABCDE		
TEST-1001-06		JAPANESE	あ, い, う		
TEST-1002-01	POST CODE				
TEST-1002-02					
...

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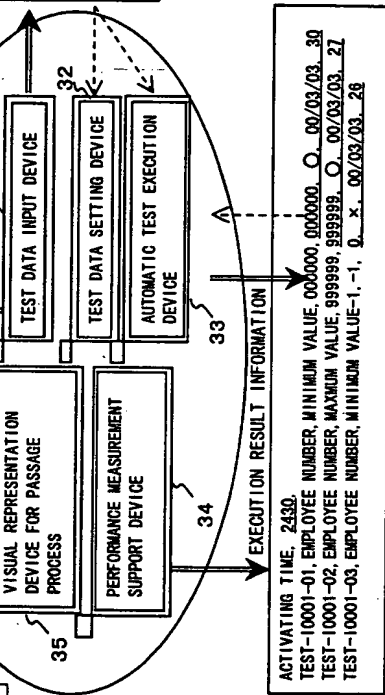
TEST SUPPORT CLASS

TEST DATA INPUT INFORMATION

ACTIVATING TIME

TEST-10001-01, EMPLOYEE NUMBER, MINIMUM VALUE, 000000, ...
TEST-10001-02, EMPLOYEE NUMBER, MAXIMUM VALUE, 999999, ...
TEST-10001-03, EMPLOYEE NUMBER, MINIMUM VALUE-1, -1, ...
...

CONVERTING FROM HUMAN-READABLE TEST SPECIFICATION FORMAT TO TEST DATA SETTING DEVICE READABLE FORMAT (CSV FILE, ETC.)



ACTIVATING TIME, 2430.
TEST-10001-01, EMPLOYEE NUMBER, MINIMUM VALUE, 000000, 00/03/03, 30
TEST-10001-02, EMPLOYEE NUMBER, MAXIMUM VALUE, 999999, 00/03/03, 27
TEST-10001-03, EMPLOYEE NUMBER, MINIMUM VALUE-1, -1, 00/03/03, 28

EMPLOYEE REGISTRATION SCREEN TEST SPECIFICATION (EMPLOYEE NUMBER)

NAME OF TEST CASE	TEST ITEM	CONTENTS OF TEST	TEST DATA	EXECUTION	EXECUTION DATE
TEST-1001-01	EMPLOYEE NUMBER	MINIMUM VALUE	000000	O	00/03/03
TEST-1001-02		MAXIMUM VALUE	999999	O	00/03/03
TEST-1001-03		MINIMUM VALUE-1	-1	x	00/03/03
TEST-1001-04		MAXIMUM VALUE+1	1000000	x	00/03/03
TEST-1001-05		INPUTTING ALPHABET	ABCDE	x	
TEST-1001-06		JAPANESE	あ, い, う	x	
TEST-1002-01	POST CODE			O	00/03/04
TEST-1002-02				O	00/03/04
...

FIG. 16

EMPLOYEE REGISTRATION SCREEN

```

torokuButton_action() {
    TEST SUPPORT A
        driverA = new TEST SUPPORT
        A(this);
    driverA.MEASUREMENT STARTING
    METHOD();
    server.torokuButton_action();
    driverA.MEASUREMENT COMPLETING
    METHOD();
}

```

'KNOW'

TEST SUPPORT A CLASS

```
+ MEASUREMENT STARTING  
METHOD ( )  
+ MEASUREMENT  
COMPLETING METHOD ( )
```

FIG. 17

FIG. 18

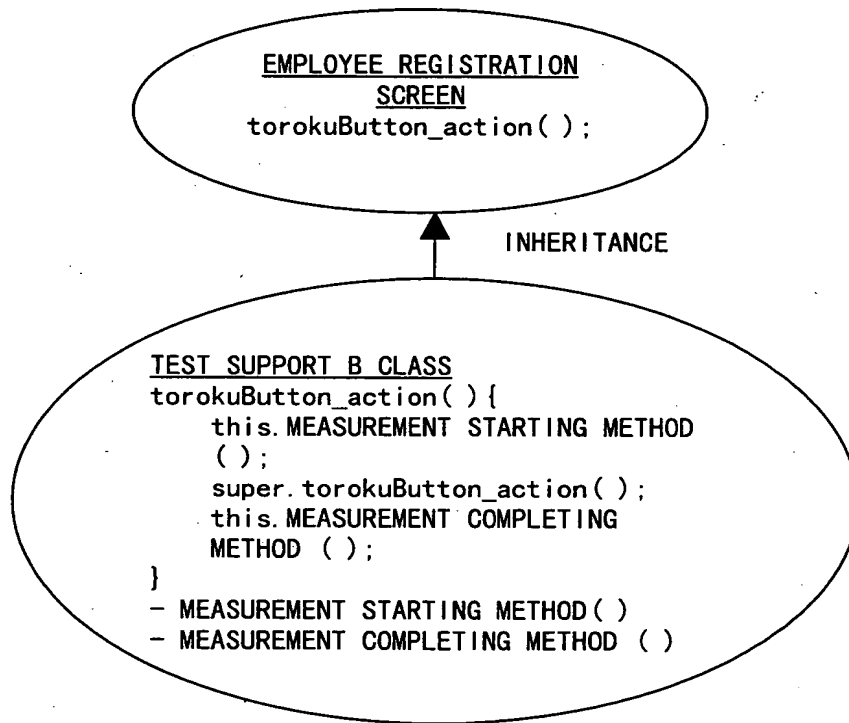


FIG. 18

```

graph TD
    START([START]) --> S1[READING SCREEN  
DEFINITION INFORMATION]
    S1 --> S2{ALL LINES  
READ?}
    S2 -- YES --> S4[GENERATING AND  
WRITING TEST  
SPECIFICATION IN  
SCREEN UNIT]
    S2 -- NO --> S3[GENERATING AND  
WRITING TEST  
SPECIFICATION IN  
ITEM UNIT]
    S3 --> S1
    S4 --> END([END])

```

FIG. 19

```

graph TD
    START([START]) --> S6[OBTAINING CONTROL INFORMATION S6]
    S6 --> S7{ALL CONTROL INFORMATION OBTAINED? S7}
    S7 -- NO --> S8[GENERATING TEST SUPPORT FUNCTION PROCESS FOR CONTROL S8]
    S8 --> S6
    S7 -- YES --> S9[GENERATING TEST SUPPORT FUNCTION PROCESS FOR SCREEN S9]
    S9 --> S10[WRITING TO TEST SUPPORT CLASS SOURCE S10]
    S10 --> END([END])
  
```

FIG. 20

NAME OF TEST CASE	TEST ITEM	CONTENTS OF TEST	TEST DATA	TEST RESULT
TEST 001	NORMAL VALUE	MINIMUM VALUE	000000	
		MAXIMUM VALUE	999999	
	ABNORMAL VALUE	MINIMUM VALUE-1	-1	
		MAXIMUM VALUE+1	1000000	
		INPUTTING ALPHABET	ABCDE	
		JAPANESE	あ, い, う	



```

graph TD
    START([START]) --> S12[READING TEST SPECIFICATION]
    S12 --> S13{ALL LINES READ?}
    S13 -- YES --> END([END])
    S13 -- NO --> S14[WRITING TEST DATA INPUT INFORMATION]
    S14 --> S12

```

F I G. 22

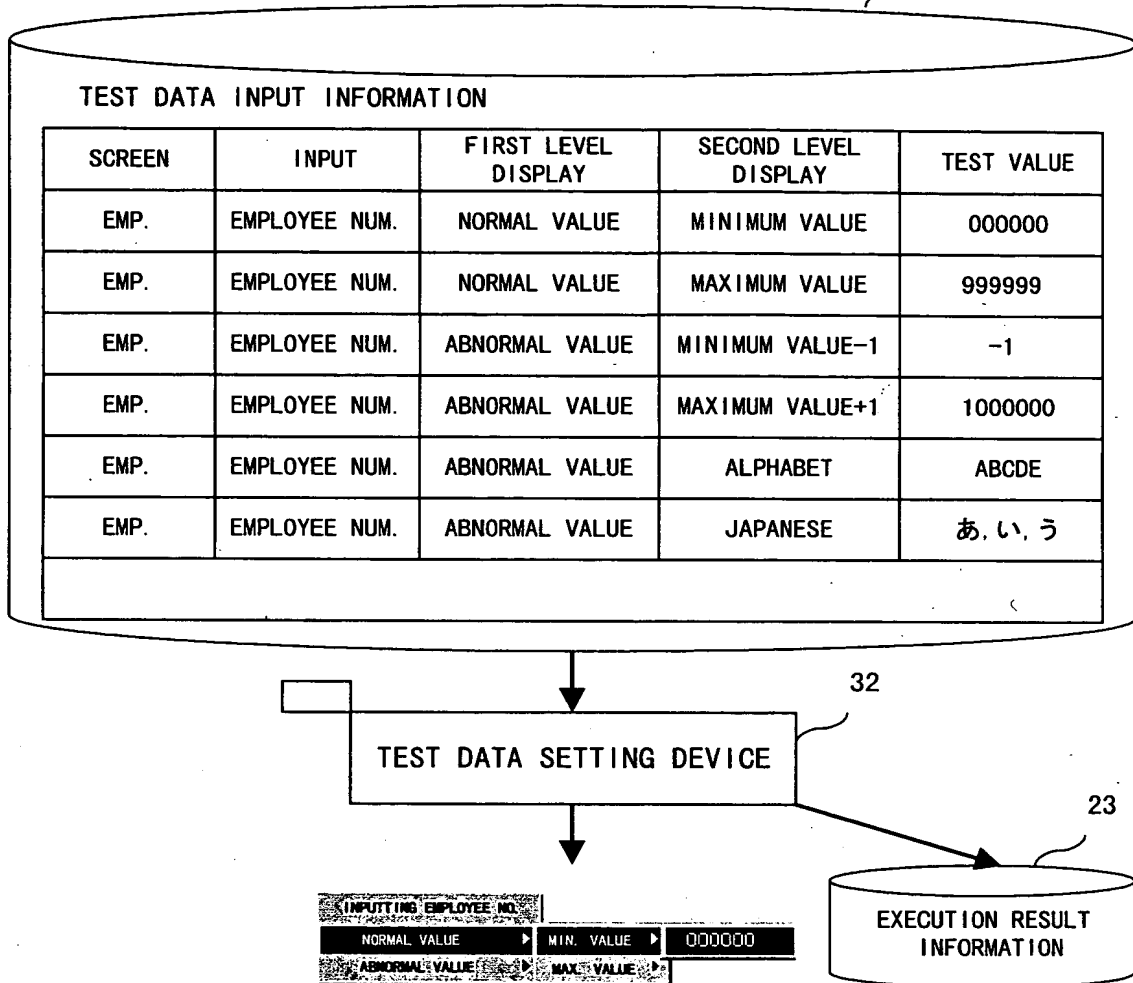
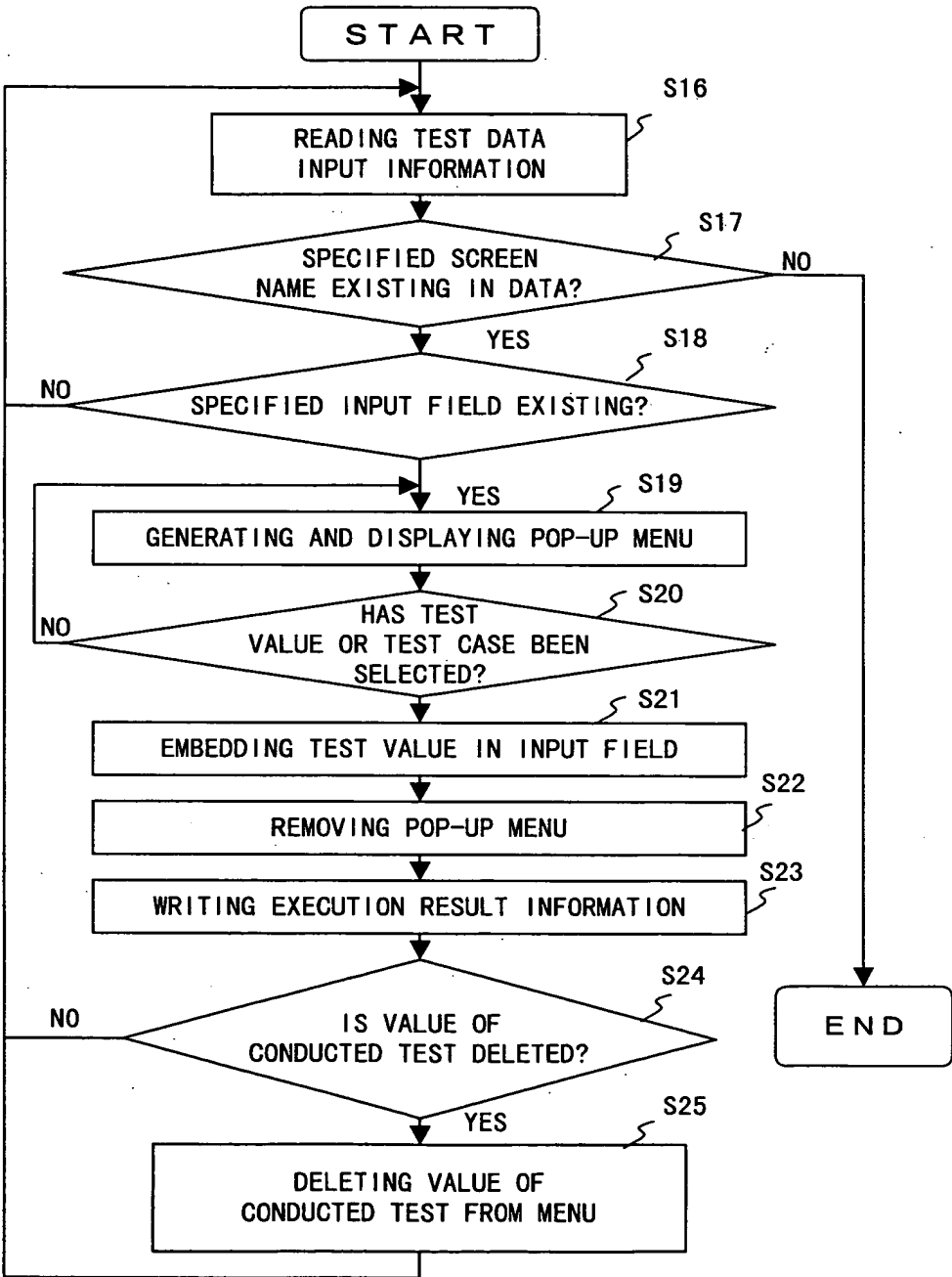


FIG. 23

[illegible]

F. I G. 24


```
graph TD; 40[(TEST DATA INPUT INFORMATION)] --> 33[AUTOMATIC TEST EXECUTION DEVICE]; 41[(EXECUTION RESULT INFORMATION FOR THE PREVIOUS TEST)] --> 33; 33 --> 23[(EXECUTION RESULT INFORMATION)];
```

The flowchart illustrates the process of automatic test execution. It begins with two input sources: 'TEST DATA INPUT INFORMATION' (labeled 40) and 'EXECUTION RESULT INFORMATION FOR THE PREVIOUS TEST' (labeled 41). These inputs are processed by the 'AUTOMATIC TEST EXECUTION DEVICE' (labeled 33). The output of this device is 'EXECUTION RESULT INFORMATION' (labeled 23).

ACTIVATING TIME	
TEST-10001-01, EMPLOYEE NUMBER, MINIMUM VALUE, 000000, 000000, 00/03/03,	
TEST-10001-02, EMPLOYEE NUMBER, MAXIMUM VALUE, 999999, 999999, 00/03/03,	
TEST-10001-03, EMPLOYEE NUMBER, MINIMUM VALUE-1, -1, -0, 00/03/03,	
...	

F I G. 25

000453-03130
PAGE 000000

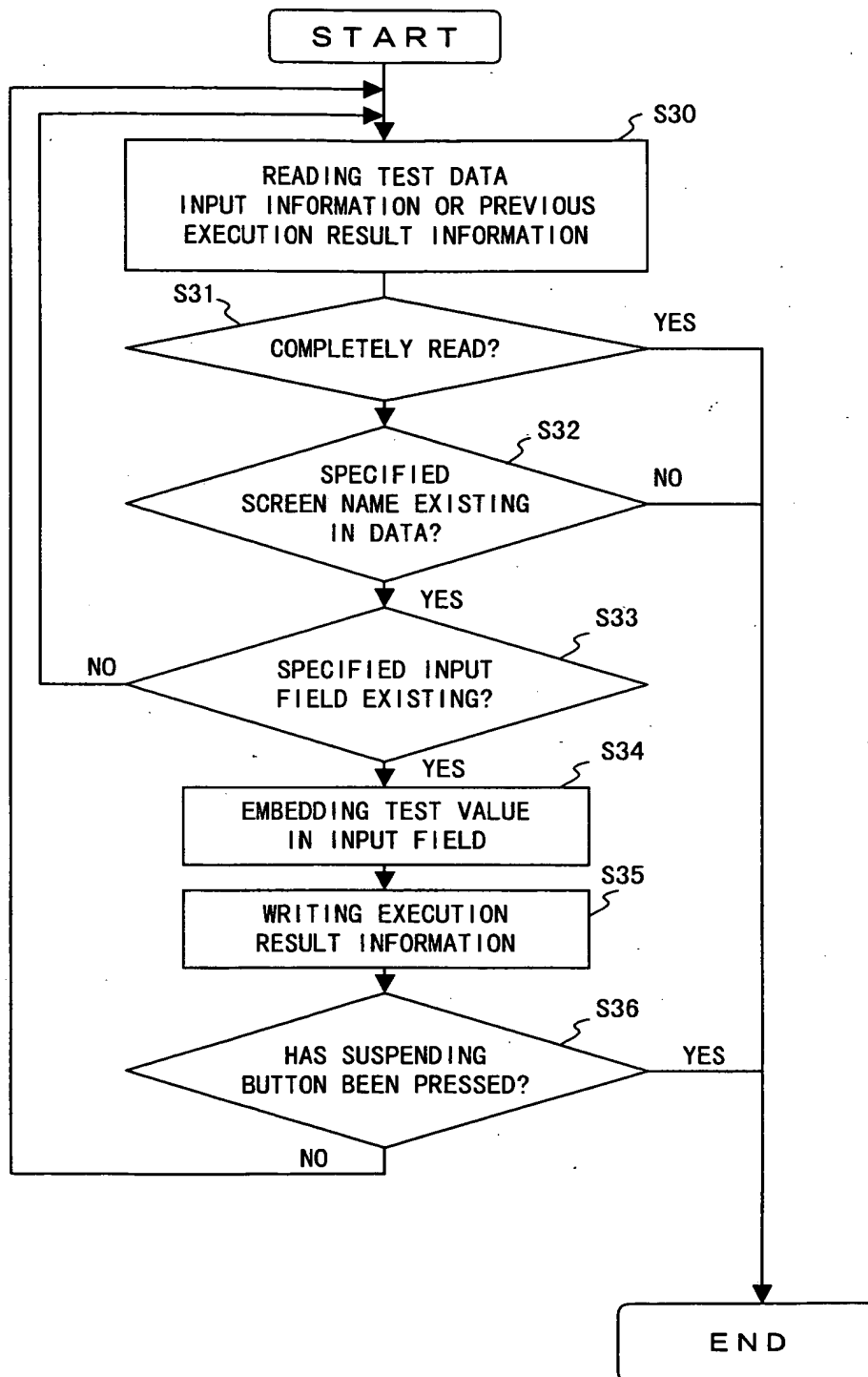
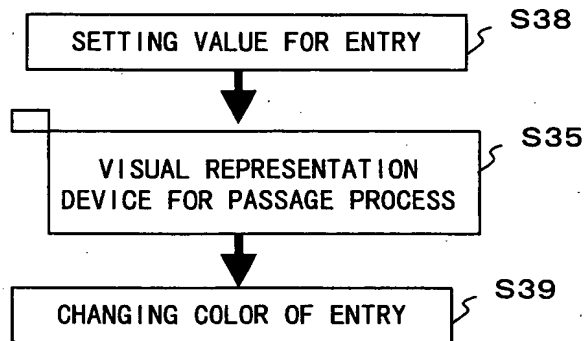


FIG. 26



EXAMPLE) REPRESENTING BACKGROUND
IN BLUE AND CHARACTERS
IN WHITE FOR NORMAL PROCESS

EXAMPLE) REPRESENTING BACKGROUND
IN YELLOW AND CHARACTERS
IN BLACK FOR ABNORMAL

EMPLOYEE REGISTRATION

EMPLOYEE NUMBER

100000

POST CODE

1234567

ADDRESS

1-9-3, Nakase, Mihz

TELEPHONE NUMBER

0431234567

REGISTRATION

STATUS: REGISTERED

EMPLOYEE REGISTRATION

EMPLOYEE NUMBER

9999999

POST CODE

1234567

ADDRESS

1-9-3, Nakase, Mihama-ku, Chiba-City

TELEPHONE NUMBER

0431234567

REGISTRATION

CANCELLATION

STATUS: EMPLOYEE NUMBER ERROR

FIG. 27

```

graph TD
    START([START]) --> S41[READING TEST DATA  
FOR ENTRY]
    S41 --> S42[PASSING TEST DATA  
TO INPUT PROCESS OF  
PARENT SCREEN PROGRAM]
    S42 --> S43{ERROR  
OCCURRED?}
    S43 -- YES --> S44[TURNING BACKGROUND  
COLOR AND CHARACTER  
COLOR TO COLOR  
OF ABNORMAL PROCESS]
    S43 -- NO --> S45[TURNING BACKGROUND  
COLOR AND CHARACTER  
COLOR TO COLOR  
OF NORMAL PROCESS]
    S44 --> END([END])
    S45 --> END
  
```

FIG. 28

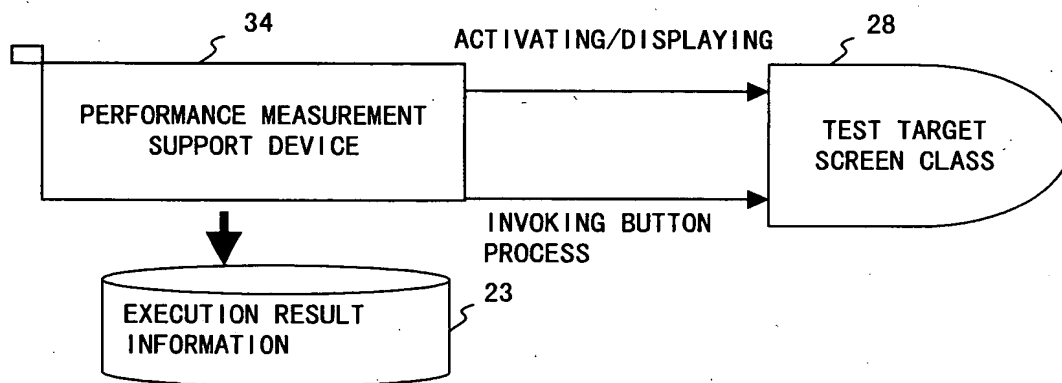


FIG. 29

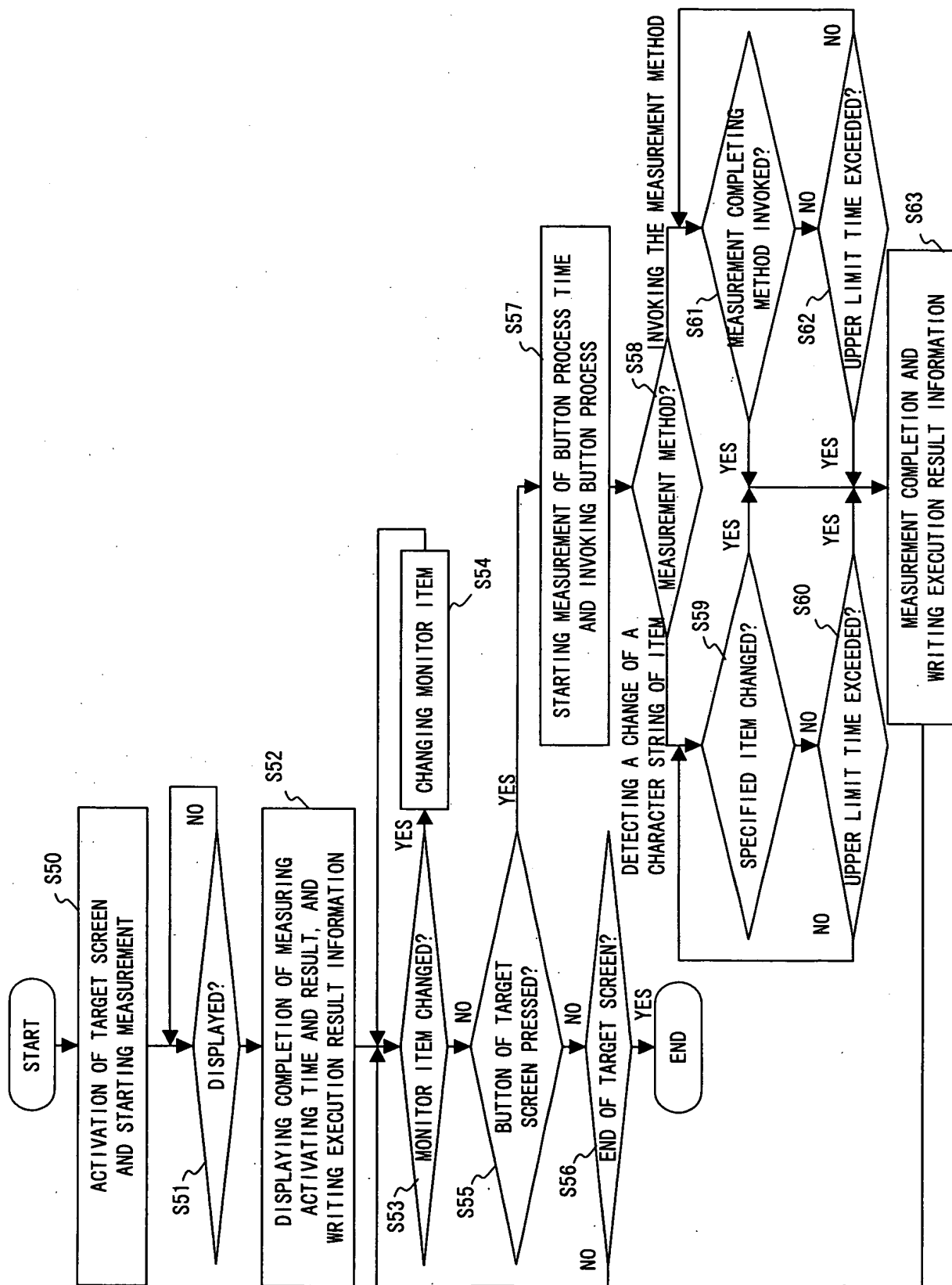


FIG. 30

EMPLOYEE REGISTRATION

EMPLOYEE NUMBER: 000000

POST CODE: 1234567

ADDRESS: 1-9-3, Nakase, Mihama-ku, Chiba-City

TELEPHONE NUMBER: 0431234567

STATUS: REGISTERED

REGISTRATION CANCELLATION

CUSTOMIZING TEST SUPPORT FUNCTION

CHANGING FUNCTION MEASURING METHOD
 SETTING MEASUREMENT UPPER LIMIT TIME
 CHANGING MONITOR ITEM

PERFORMANCE MEASUREMENT SUPPORT

SUSPENDING MEASUREMENT

ACTIVATING TIME IS 560 MILLISECOND

ITEM FOR DETECTION OF PROCESS TERMINATION

STATUS

EMPLOYEE NUMBER

POST CODE

ADDRESS

TELEPHONE NUMBER

STATUS

F I G . 3 1

```

graph TD
    START([START]) --> S65[READING TEST SPECIFICATION S65]
    S65 --> S66{ALL LINES READ? S66}
    S66 -- YES --> END([END])
    S66 -- NO --> S67[READING TEST RESULT RECORD S67]
    S67 --> S68{ALL LINES READ? S68}
    S68 -- YES --> END
    S68 -- NO --> S69{TEST CASE MATCHING? S69}
    S69 -- YES --> S70[ENTERING EXECUTION RESULT AND EXECUTION DATE S70]
    S69 -- NO --> S66
    S70 --> S66

```

FIG. 32

EMPLOYEE REGISTRATION		INPUTTIG EMPLOYEE NO.	
EMPLOYEE NUMBER	000000	NORMAL VALUE	MIN. VALUE
POST CODE		ABNORMAL VALUE	MAX. VALUE
ADDRESS			
TELEPHONE NUMBER			
REGISTRATION		CANCELLATION	

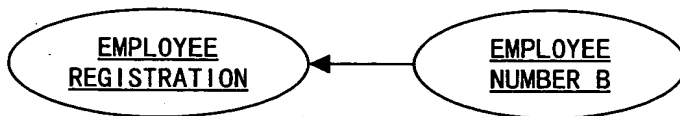


FIG. 33

EMPLOYEE REGISTRATION		X
EMPLOYEE NUMBER	000000	
POST CODE	1234567	
ADDRESS	1-9-3, Nakase, Mihama-ku, Chiba-City	
TELEPHONE NUMBER	0431234567	
REGISTRATION		CANCELLATION

**EMPLOYEE
REGISTRATION**

FIG. 34

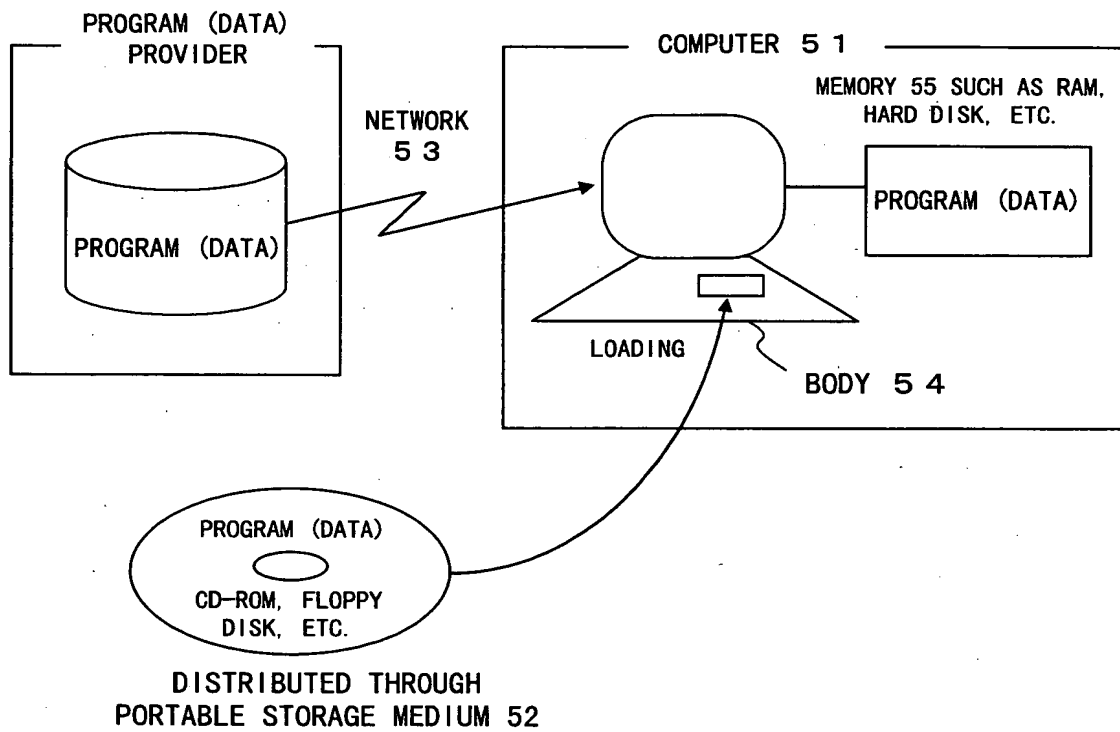


FIG. 35